

1. EXECUTIVE SUMMARY

This chapter summarizes the local traffic results report, including the alternatives considered, methodology and performance measures used to evaluate the alternatives, and analysis results. Supporting details are provided in the chapters and appendices following the summary.

Separate local traffic results reports were prepared for the Westside and Eastside areas in order to facilitate review by local jurisdictions and other stakeholders. This report combines the Eastside and Westside results reports. The Westside refers to affected interchanges and selected intersections in the portion of the SR 520 corridor west of the Evergreen Point Floating Bridge, continuing south on I-5 to the Stewart Street interchange. The Eastside refers to affected interchanges and selected intersections in the SR 520 corridor from the Evergreen Point Floating Bridge east to the SR 520 terminus at the Avondale Interchange at Union Hill Road.

1.1 ALTERNATIVES CONSIDERED

The September 2001 Trans-Lake Washington Project Local Traffic Alternatives Development and Assessment Report considered projected 2020 traffic volumes for eight multimodal alternatives for the SR 520 and I-90 corridors. A range of potential highway, high capacity transit (HCT) and transportation demand management (TDM) actions were evaluated. For SR 520, the Build alternatives included 4-lane, 6-lane and 8-lane configurations, in combination with various high capacity transit options for the I-90 corridor. Following the selection committee's decision to focus on the SR 520 corridor as the route with the most pressing needs, a more detailed analysis of three SR 520 Build alternatives was conducted, in addition to a No Action alternative. Travel demand forecasts were modified to reflect anticipated land use changes throughout the region through the year 2030.

The three 2030 Build alternatives include the following SR 520 configurations:

1. 4 Lanes - Maintaining the current four lanes of capacity of SR 520 while replacing the floating bridge, providing shoulders to standards, and strengthening or replacing sections of the corridor vulnerable to earthquakes. The local traffic impacts of this alternative, called the Safety & Preservation (S&P) Alternative, are identical to the No Action Alternative.
2. 6 Lanes - Adding one combined high-occupancy vehicle (HOV)/bus rapid transit (BRT) lane in each direction on SR 520, with modifications at eight interchanges (four Westside interchanges and four Eastside interchanges). This alternative is referred to as the 2030 6-Lane Build alternative. For the 2030 6-Lane Build, a design alternative is also considered that would provide a second parallel Montlake Bridge across the Ship Canal that would operate as one direction of a one-way couplet with the existing Montlake Bridge.
3. 8 Lanes - Adding one HOV/BRT lane and one general purpose (GP) lane in each direction on SR 520, with modifications at 11 interchanges (four Westside interchanges and seven Eastside interchanges). This alternative is referred to as the 2030 8-Lane Build alternative.



On September 5, 2002, the Trans-Lake Washington Project Executive Committee selected a preliminary preferred alternative to advance to a Draft Environmental Impact Statement (DEIS): the 6-lane plan with expanded bridge pontoons to accommodate future high capacity transit on SR 520. Consideration of future light rail transit (LRT) in the I-405 corridor was also recommended, independent of any HCT option ultimately selected for SR 520.

1.2 METHODOLOGY AND PERFORMANCE MEASURES ANALYZED

Traffic conditions were analyzed for the morning and late afternoon peak periods, for both the base year (year 2000) and future horizon year (year 2030). Freeway ramp volumes were reassigned as appropriate, to evaluate the impacts of ramp closures and revised interchange configurations on local street traffic.

Existing and horizon year peak period traffic was analyzed at each existing interchange and new ramp connection to SR 520, and at major intersections adjacent to SR 520. Traffic analysis was also conducted where geometric changes were proposed with one or more of the Build alternatives, such as along Montlake Boulevard north of SR 520 to 25th Avenue NE.

To ensure analysis of conservatively high traffic volumes and reflect demand volumes unconstrained by existing deficiencies, both 2000 and 2030 peak hour volumes are based on the highest 15-minute freeway flows during the 6:00 AM to 9:00 AM morning peak period and the 3:00 PM to 6:00 PM late afternoon peak period overlaid upon the local street AM and PM peak hour volumes. Hourly volumes were developed based on these peak flow rates to establish baseline 2000 peak hour volumes. Next, model-generated growth factors were applied. The resulting unconstrained 2030 AM and PM peak hour demand volumes were analyzed for local traffic impacts.

Intersection levels of service (LOS) based on average intersection delay and average critical queue lengths are reported. Critical queue lengths are those where the average queue over the peak hour exceeds available storage for specific turning movements, or where queued traffic would extend back into adjacent intersections, disrupting traffic flow.

At the outset of the Trans-Lake Washington Project a performance standard was adopted requiring 2030 Build conditions to meet or exceed 2030 No Action conditions for intersection level of service (LOS). In addition, an intersection delay standard was adopted requiring intersection average total delay intersection for the 2030 Build alternatives to be no more than five seconds greater than 2030 No Action intersection total delay. This performance standard was applied separately to 2030 AM and PM peak hour demand volumes for the Build alternatives.

One result of applying the design modification threshold separately to both peak periods was that potential design modifications are needed at some locations for one peak hour projected to operate worse than No Action conditions, even if operations during the opposite peak are worse but do not trigger the No Action threshold. For example, an intersection operating at LOS A under 2030 No Action AM peak hour conditions but LOS B under 2030 Build AM peak hour conditions requires design modifications (i.e., improvements) to meet or exceed 2030 No Action conditions. This is true even if 2030 PM peak hour conditions are LOS F with any of the 2030



Build alternatives including 2030 No Action. A second consequence of the methodology is that design modifications are needed for some intersections projected to operate worse than No Action, even if they would operate at LOS D or better with either of the 2030 Build alternatives without further design modification. (LOS D is generally considered acceptable in urban areas.) Finally, for new intersections that would be created with either Build alternative, design modifications were identified only for intersections operating at LOS E or F with 2030 AM or PM peak hour build volumes.

Potential design modifications (generally intersection improvements in addition to those shown in the design plans) were identified and tested for locations where the intersection LOS for either peak hour worsened with the 6-Lane or 8-Lane 2030 Build alternatives compared to 2030 No Action conditions, or average delay increased by more than five seconds. Potential design modifications were deemed sufficient if they matched or bettered 2030 No Action conditions. For a few of the Eastside intersections, improvements could not be identified that would retain 2030 No Action or better conditions. These locations will be evaluated further as part of the DEIS. Critical queues will also be analyzed in greater detail as part of the DEIS, through local traffic simulation modeling.

Updated design drawings including modifications not reflected in the traffic analysis will be evaluated in the DEIS.

1.3 OVERVIEW OF ANALYSIS RESULTS

Tables 1 and 2 highlight the analysis locations requiring additional design modifications to accommodate 2030 AM and/or PM peak hour demand volumes with any of the 2030 Build alternatives. Design modifications were triggered by the threshold adopted specifically for the Trans-Lake Project traffic analysis: intersection LOS with either 6-Lane or 8-Lane Build alternative volumes should be no worse than the comparable 2030 No Action LOS, and average intersection delay should increase by no more than five seconds. Meeting or exceeding 2030 No Action conditions is a more stringent standard than required in an Environmental Impact Statement (EIS). For this reason, and because the project design continues to be refined, changes are referred to as design modifications instead of mitigation measures.

Twenty-six intersections are projected to operate at or below LOS E with 2030 No Action volumes, including 8 Westside intersections and 18 on the Eastside. With the 2030 6-Lane Build alternative, 17 of the Westside intersections analyzed operate worse than with 2030 No Action volumes, triggering the need for additional design modifications. Another 18 Eastside analysis locations exceed the 2030 No Action threshold. With the design modifications assumed in the traffic analysis, 20 intersections are projected to operate at LOS E or LOS F. A design option for the 2030 6-Lane Build alternative provides a second parallel Montlake Bridge. This design option was analyzed at four intersections, and did not affect the number of design modifications needed. New traffic signals were not considered design modifications.

With the 2030 8-Lane volumes, 16 Westside and 25 Eastside intersections exceed the 2030 No Action threshold and require additional design modifications. With potential design modifications reflected in the traffic analysis, 16 intersections are projected to operate at LOS E or LOS F with the 8-Lane Build alternative.



Tables 1 and 2 show a checkmark (✓) for intersections projected to operate at LOS E or F with 2030 traffic. A circle (●) under the 2030 Build alternatives indicates intersections requiring design modifications to meet the 2030 No Action threshold. A check mark and a circle together (✓●) indicate that the intersection is projected to operate at LOS E or LOS F with the recommended design modification. Design modifications assumed in the analysis are described in the chapter text.

Table 1. Westside Impact Locations

Locations	2030 No Action	2030 6-Lane	6-Lane with 2 nd Montlake Bridge	2030 8-Lane
I-5/Stewart St. Interchange				
Denny Way/Stewart St.		●		●
John St./Eastlake Ave.		●		●
I-5/Mercer St. Interchange				
Mercer St./Fairview Ave./I-5 Ramps	✓	✓●		✓●
Valley St./Fairview Ave. N	✓	●		●
SR520/Harvard Ave. Interchange				
Roanoke St./10 th Ave. E		●		●
Harvard Ave./Roanoke St./SR 520 WB Off Ramp	✓	✓●		✓●
SR520/Montlake Blvd. Interchange				
Montlake Blvd./Roanoke St.				
Lake Washington Blvd./SR 520 EB On/WB Off Ramps	✓	●	●	●
Montlake Blvd. NE/SR 520 EB Ramp	✓	✓	✓	✓
Montlake Blvd. NE/SR 520 WB Ramp		●	●	●
Montlake Blvd. NE/E Shelby St.	✓	✓●		
Montlake Blvd. NE/NE Pacific St.	✓	✓●		✓●
Montlake Blvd. NE/NE Pacific Pl.	✓	✓●		✓●
Montlake Blvd. NE/25 th Ave. NE		●		●
Montlake Blvd./Walla Walla Rd./NE 44 th St.		●		●
Montlake Blvd./NE 45 th St.		●		●
25 th Ave. NE/Pend Oreille Rd./NE 44 th St.		●		●
NE Pacific St./NE Pacific Pl.		●		●
NE Pacific St./15 th Ave. NE		●		●

✓ = LOS E/F locations.

● = Design modification necessary: Alternative LOS is worse than 2030 No Action, or delay per vehicle exceeds 2030 No-Action delay by more than 5 seconds.

■ = Not analyzed: the Build alternative either results in operations better than 2030 No Action, or eliminates the intersection. For the 6-lane Build Alternative with parallel 2nd Montlake Bridge, indicates the area was outside the impact area of the design alternative.



Table 2. Eastside Impact Locations

Locations	2030 No Action	2030 6-Lane	2030 8-Lane
84th Ave NE Interchange			
84 th Avenue NE/SR 520 WB On-ramp			
84th Avenue NE/Hunts Point Circle	✓	✓ ●	✓ ●
92nd Ave NE Interchange			
92 nd Avenue NE/SR 520 WB Off-ramp	✓	✓ ●	✓ ●
92 nd Avenue NE/SR 520 EB On-ramp			
Bellevue Way Interchange			
Bellevue Way/NE 38 th Pl.	✓	●	●
Bellevue Way/Northup Way			
Bellevue Way/NE Points Drive		✓ ●	●
Bellevue Way/SR520 WB On/EB Off Ramps			●
Bellevue Way/SR 520 EB On/WB Off Ramps			
Bellevue Way/NE 34 th Pl.			
108th Ave. NE Interchange			
108 th Ave. NE/SR 520 EB On-Ramp	✓		
108 th Ave. NE/ SR 520 WB Ramps			
108 th Avenue NE/Northup Way	✓	●	✓
108 th Ave. NE/HOV Direct Access Ramps			
108 th Ave. NE/NE 34 th Pl.			
124th Ave. NE Interchange			
124 th Ave. NE/Northup Way		●	●
120 th Ave. NE/Northup Way			
NE 24 th St./Northup Way			
116 th Ave. NE (north T)/Northup Way			
116 th Ave. NE (south T)/Northup Way			
I-405 NB On & Off Ramps/Northup Way			
I-405 SB On & Off Ramps/Northup Way			
148th Ave. NE Interchange			
148 th Ave. NE/NE 24 th St.	✓	✓ ●	✓ ●
148 th Ave. NE/SR 520 EB Ramps			●
148 th Ave. NE/SR 520 WB Ramps/NE 29 th St.	✓	✓	✓ ●

✓ = LOS E/F locations.

● = Design modification necessary: Alternative LOS is worse than 2030 No Action, or delay per vehicle exceeds 2030 No-Action delay by more than 5 seconds.

■ = Not analyzed: the Build alternative either results in operations better than 2030 No Action, or eliminates the intersection. For the 6-lane Build Alternative with parallel 2nd Montlake Bridge, the area was outside the impact area of the design alternative.



Table 2 (cont'd). Eastside Impact Locations

Locations	2030 No Action	2030 6-Lane	2030 8-Lane
NE 40th St. Interchange			
NE 40 th Street/SR 520 WB Ramps			●
NE 40 th Street/SR 520 EB Ramps		●	●
NE 40 th Street/156 th Avenue NE	✓	✓ ●	✓ ●
NE 51st St. Interchange			
NE 51 st Street/SR 520 WB Ramps			●
NE 51 st Street/SR 520 EB Ramps			●
West Lake Sammamish Pkwy. Interchange			
SR 520 EB Ramps/ W Lake Sammamish Pkwy.	✓	✓	✓ ●
SR 520 WB Ramps/ W Lake Sammamish Pkwy./Leary Way NE	✓	✓ ●	✓ ●
159 th PL. NE/NE Leary Way	✓	✓ ●	✓ ●
Bear Ck. Pkwy/NE Leary Way	✓	✓ ●	✓ ●
Bear Ck. Pkwy/NE 74 th St.	✓		
Redmond Way Interchange			
Redmond Way/SR 520 WB On-Ramp	✓	●	✓ ●
Redmond Way/SR 520 EB Off-Ramp		✓ ●	✓ ●
NE 76 th St./SR 520 WB Off-Ramp	✓		●
NE 76 th St./SR 520 EB On-Ramp			
Redmond Way/NE 70 th St.	✓	✓ ●	✓ ●
E Lake Sammamish/180 th Ave /Redmond Way		●	✓ ●
Avondale Way Interchange			
Avondale Rd. NE/NE Union Hill Rd.			
NE Union Hill Rd./Avondale Rd. Extension	✓	✓ ●	✓ ●
Avondale 520 Extension/Avondale Rd. NE	✓	✓ ●	✓ ●

✓ = LOS E/F locations.

● = Design modification necessary: Alternative LOS is worse than 2030 No Action, or delay per vehicle exceeds 2030 No-Action delay by more than 5 seconds.

■ = Not analyzed: the Build alternative either results in operations better than 2030 No Action, or eliminates the intersection. For the 6-lane Build Alternative with parallel 2nd Montlake Bridge, the area was outside the impact area of the design alternative.

1.4 SUMMARY OF EXISTING AND FUTURE NO ACTION INTERSECTION OPERATIONS

This section provides existing conditions information only for those intersections requiring design modifications to meet the 2030 No Action threshold with one of the Build alternatives. In Sections 1.5 and 1.6, relevant intersections are listed for each 2030 Build alternative, together with the identified design modifications and a general assessment of how difficult implementing



the potential modifications would be. Traffic operational comparisons for all the intersections analyzed are included in Chapter 6.

To provide a comparison with existing and 2030 No Action conditions, Tables 3 through 6 immediately below list analysis locations operating at LOS E or LOS F with existing intersection geometry and traffic control and existing or 2030 No Action AM or PM peak hour demand volumes. While LOS is only one of the measures of effectiveness (MOEs) analyzed, it is one commonly used to provide an overall indicator of traffic operations. Volume-to-capacity ratios approaching or exceeding 1.0, and critical queue lengths extending out of available storage area also indicate potential operational concerns. Both measures are reported later in the document.

Tables 7 through 10 address the 2030 6-Lane Build and 2030 8-Lane Build alternatives. Results for the two Build alternatives reflect design modifications identified to meet or exceed 2030 No Action conditions. Tables 3 through 10 report intersection level of service, average delay, volume-to-capacity ratio and critical queue for intersections with LOS E or LOS F operations.

Based on existing (2000) AM and PM peak hour demand volumes, four existing Westside intersections at three interchanges operate at LOS E or LOS F (Table 3). The intersections of Mercer Street/Fairview Avenue/I-5 Ramps and Montlake Boulevard NE/SR 520 EB Ramps operate at LOS F during both AM and PM peak hours, while the other two operate below LOS D only during PM peak hour conditions.

Table 3. Existing Westside Local Traffic Operations: Summary of LOS E and F Locations

Intersection	AM Peak Hour				PM Peak Hour			
	LOS	Delay (sec)	V/C	Critical Queue	LOS	Delay (sec)	V/C	Critical Queue
I-5/Mercer St. Interchange								
Mercer St./Fairview Ave./I-5 Ramps	F	109	1.39	WBL 675' WBR 1825'	F	175	1.78	EBTL 2000' NBR 1250' WBL 275' WBR 950'
SR 520/Harvard Ave. Interchange								
Roanoke St./Harvard Ave./SR 520 WB Off Ramp	C	33	0.96		E	62	1.20	EBLT 300' SBL 250' SBLR 225'
SR 520/Montlake Blvd. Interchange								
Montlake Blvd. NE/SR 520 EB Ramp	F	123	1.81	EBL 300' SBL 475' SBT 350' NBL 175' NBT 750'	F	98.4	1.49	EBL 425' EBT 425' NBT 575'
Montlake Blvd. NE/NE Pacific Pl.	B	13	0.79	EBL 100'	E	78	1.27	EBL 275' NBT 100'

Eight existing Eastside intersections at six interchanges operate at LOS E or LOS F based on 2000 peak hour demand volumes (Table 4). One – SR 520 EB Ramps/W Lake Sammamish Parkway – operates at LOS F during both AM and PM peaks, with high volume-to-capacity



ratios and long eastbound left turn queues. Three more operate at LOS F during either the AM or PM peak hour, and one operates at LOS E during both peaks.

Table 4. Existing Eastside Local Traffic Operations: Summary of LOS E and F Locations

Intersection	AM Peak Hour				PM Peak Hour			
	LOS	Delay (sec)	V/C	Critical Queue	LOS	Delay (sec)	V/C	Critical Queue
108th Ave. NE Interchange								
108 th Ave. NE/NE Northup Way	E	62	1.30		E	62	1.26	NBL 350' WBL 400'
124th Ave. NE Interchange								
116 th Ave. NE.(north T)/Northup Way	D	44	1.14	WBT 590'	E	63	1.37	WBT 810'
148th Ave. NE Interchange								
148 th Ave. NE/NE 24 th St.	E	59	1.10	SBL 740'	F	94	1.55	SBL 250' EBL 490' WBL 330'
148 th Ave. NE/SR 520 WB Ramps/NE 29 th St.	C	30	0.90		E	57	1.22	
W Lake Sammamish Pkwy Interchange								
SR 520 EB Ramps/W Lake Sammamish Pkwy.	F	126	1.52	EBL 850' SBT 970'	F	155	1.65	EBL 1100' SBT 1200'
Redmond Way Interchange								
Redmond Way/SR 520 WB On	D	37	1.01	WBL 710'	E	74	1.85	WBL 350'
E Lake Sammamish/180 th Ave/Redmond Way	F	107	1.51	NBL 330' WBT 580'	D	46	1.15	NBL 420'
Avondale Way Interchange								
Union Hill Rd/Avondale Rd. Extension	D	49	1.19	WBL 260'	F	112	1.26	WBL 300' NBT 1230'

As shown below in Table 5, eight Westside intersections analyzed operate at LOS E or LOS F with 2030 No Action volumes in either the AM or PM peak period, four more than in the existing conditions scenario. Volume-to-capacity (v/c) ratios based on future travel demand are extremely high at several of the Westside intersections operating at LOS F in the 2030 No Action Alternative, indicative of a high level of unsatisfied demand.



Table 5. Westside 2030 No Action Alternative: Summary of LOS E and F Locations

Intersection	AM Peak Hour				PM Peak Hour			
	LOS	Delay (sec)	V/C	Critical Queue	LOS	Delay (sec)	V/C	Critical Queue
I-5/Mercer St. Interchange								
Mercer St./Fairview Ave./I-5 Ramps	F	92	1.26	EBTL 800' WBL 575' WBR 1550' NBT 200'	F	180	1.86	EBTL 1425' EBR 950' WBR 575' NBT 375' NBR 875'
Valley St./Fairview Ave. N	B	16	0.89		F	93	1.27	NBL 425' NET 400' SWT 550'
SR 520/Harvard Ave. Interchange								
Roanoke St./Harvard Ave./SR 520 WB Off Ramp	D	50	1.15	EBL/T 150' SBL 200'	F	83	1.38	EBL/T 400' NBR 75' SBL 350' SBL/R 325'
SR 520/Montlake Blvd. Interchange								
Montlake Blvd. NE/SR 520 EB Ramp	F	169	2.23	EBL 425' EBT 400' WBR 325' SBL 650' SBT 475' NBL 275' NBT 975'	F	119	1.65	EBL 500' EBT 500' WBR 325' SBL 200' SBT 350' NBT 675'
Montlake Blvd. NE/E Shelby St.	E	73	1.19	NBT 1475' SBT 1375'	F	86	1.32	NBT 1675' SBT 1050'
Montlake Blvd. NE/NE Pacific St.	E	76	1.31	NBL 450' NBT 825' SBT 1000' SER 525'	E	63	1.32	NBL 275' NBT 1300' SBT 600' SER 500'
Montlake Blvd. NE/NE Pacific Pl.	C	22	1.01	EBL 100' SBT 825'	F	107	1.63	EBL 350' NBT 1450'
Lake Washington Blvd./SR 520 EB On/WB Off Ramps	E	38	N/A		F	58	N/A	

Similarly, the number of Eastside analysis locations operating at LOS E or LOS F increases with 2030 No Action alternative volumes compared to existing conditions, as shown below in Table 6. With the exception of 124th Avenue, every Eastside interchange has at least one intersection operating at LOS E or LOS F with 2030 No Action volumes. Volume-to-capacity (v/c) ratios are so high at some of the Eastside interchanges with unsignalized ramp terminal intersections as to be meaningless.



Table 6. Eastside 2030 No Action Alternative: Summary of LOS E and F Locations

Intersection	AM Peak Hour				PM Peak Hour			
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue
84th Ave. NE Interchange								
84 th Avenue NE/SR 520 EB Off-Ramp	E	38	1.06		E	43	1.06	
92nd Ave. NE Interchange								
92 nd Ave. NE/SR 520 WB Off/NE 33 rd St.	F	56	0.95	WBLR 310'	E	43	0.86	
Bellevue Way Interchange								
Bellevue Way/NE 38 th St.	B	16	0.93		E	77	1.34	NBT 1930'
108th Ave. NE Interchange								
108 th Ave. NE/SR 520 EB On Ramp	D	29	0.56		F	70	1.76	NBL 920' SBT 320' WBL 400'
108 th Ave. NE/NE Northup Way	E	62	1.10	NBL 390' NBT 410' NBR 190'	F	87	1.18	NBL 720' NBT 760' WBL 570' WBTR 370' SBTR 370'
148th Ave. NE Interchange								
148 th Ave. NE/NE 24 th St.	E	80	1.28	NBT 790' SBL 1130' SBT 720' EBL 210' WBR 520'	F	123	1.47	NBT 1070' SBL 420' SBT 990' EBL 290' EBTR 400' WBL 530' WBT 420' WBR 900'
148 th Ave. NE/SR 520 WB Ramps/NE 29 th Street	C	32	1.02		F	94	1.71	WBL 470' WBT 1330' SBT 670'
NE 40th St. Interchange								
NE 40 th St./156 th Ave. NE	F	134	1.61	NBL 490' EBT 1100' EBR 1260'	F	123	1.81	NBT 360' NBL 1220' EBT 380' WBTR 940'
W Lake Sammamish Pkwy Interchange								
SR 520 EB Ramps/W Lake Sammamish Pkwy.	F	150	1.65	SBT 1030' EBLR 1010'	F	220	2.08	NBT 2700' SBT 2990' EBLR 950'
SR 520 WB Ramps/W Lake Sammamish Pkwy./Leary Wy NE	F	94	1.61	NBT 990' SBR 360' EBR 470' WBT 720'	F	197	2.78	NBR 4610' SBL 1110' SBT 1640' SBR 1330' WBL 1080' WBT 1220'



**Table 6 (cont'd). Eastside 2030 No Action Alternative:
Summary of LOS E and F Locations**

Intersection	AM Peak Hour				PM Peak Hour			
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue
159 th PL. NE/NE Leary Way	B	15	0.92	SBL 190' EBT 530'	F	220	6.65	SBL 1730' EBL 630' EBT 5550' WBT 1920'
Bear Ck. Pkwy/NE Leary Way	A	9	0.92	WBT 370'	F	127	1.93	NBT 1060' EBT 1470' EBR 3570' WBT 1080'
Bear Ck. Pkwy/NE 74 th St.	B	11	0.18		F	>300	1.36	
Redmond Way Interchange								
Redmond Way/SR 520 WB On	C	24	0.98	EBR 170'	E	65	1.09	SBT 470' EBL 250' EBT 610' WBT 980' WBL 470'
NE 76 th St./SR 520 WB off	C	16	0.25		E	45	0.77	
Redmond Way/NE 70 th St.	B	11	0.78	NBT 690'	E	77	1.20	SBT 1940'
Avondale Way Interchange								
Union Hill Rd/Avondale Rd. Extension	E	66	1.18	SBT 810' WBL 340'	F	104	1.30	NBT 1280' EBT 440' WBT 480'
Avondale Rd. Extension/ Avondale Rd.	A	5	0.80	WBL 310'	E	74	1.31	NBR 1550' EBTR 770'

1.5 SUMMARY OF 2030 6-LANE BUILD ALTERNATIVE OPERATIONS

Tables 7 and 8 below list Westside and Eastside intersections operating at LOS E or LOS F with the 2030 6-Lane Build alternative. Also listed are intersections that would require design modifications to match 2030 No Action performance, but operate at LOS D or better. LOS results shown in tables 7 and 8 include the design modifications listed, which have been assigned a simple assessment of the potential modification's degree of difficulty.

“Simple” modifications involve lane restriping, adding or modifying traffic signal control, or minor pavement widening. “Difficult” design modifications involve more substantial capacity increases like adding turn lanes or through lanes. In general and based on an preliminary level of review without considering potential impacts on the built or natural environment, the majority of design modifications required for the 2030 6-Lane Build alternative to meet or exceed 2030 No Action conditions fall into the “difficult” category. Some, however, particularly right turn lanes, may be possible with little or no additional pavement and right-of-way required. The feasibility of potential design modifications will be evaluated further as part of the DEIS analysis.



Table 7. Westside 2030 6 Lane Alternative: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
I-5/Stewart St. Interchange									
Denny Way/Stewart St.	D	37	1.02	WBL 350'	B	13	0.76		Permissive WBL (simple)
John St./Eastlake Ave.	B	13	0.69	SBT 375'	B	11	0.61	SBT 125'	3 rd I-5 off-ramp through lane (difficult)
I-5/Mercer St. Interchange									
Mercer St./Fairview Ave./I-5 Ramps	E	64	1.12	EBTL 975' WBL 650' WBR 1000' NBT 225'	F	170	1.69	EBTL 1850' WBL 225' WBR 1400' NBT 350' NBR 1125'	3 rd WBR; traffic signal interconnect (difficult)
Valley St./Fairview Ave. N	B	17	0.88	NBL 325'	D	43	1.08	NBL 400' SWT 325'	Signal phasing (simple)
SR 520/Harvard Ave. Interchange									
Roanoke St./10 th Ave. E	A	6	0.72		A	9	0.78		Change WBLT to WBL (simple)
Roanoke St./Harvard Ave./SR 520 WB Off Ramp	D	36	0.96		E	74	1.32	EBL 350' WBT 300' WBR 175' NBT 225' SBL 350' SBT 325'	Change EBLT to EBL (simple)
SR 520/Montlake Blvd. Interchange									
Montlake Blvd. NE/SR 520 EB Ramp	F	138	1.91	EBL 450' SBL 775' NBR 1300'	E	75	1.24	EBL 350' EBT 275' WBT 250' WBR 225' SBL 275' NBR 750'	



Table 7 (cont'd). Westside 2030 6 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
Montlake Blvd. NE/SR 520 WB Ramp	D	49	1.90	NBL 350' SBT 300'	A	9	0.94	NBT 500' SBT 225'	SBT (difficult)
Montlake Blvd. NE/E Shelby St.	D	42	1.15	NBT 1750'	E	62	1.25	NBT 2025'	SBT (difficult)
Montlake Blvd. NE/NE Pacific St.	E	60	1.21	NBL 425' NBT 575' SBT 950' EBR 725'	D	45	1.16	NBT 1350' SBT 325' EBR 575'	Convert SBR to SBTR lane (simple)
Montlake Blvd. NE/NE Pacific Pl.	B	17	0.92		E	55	1.22	EBL 350' WBL 325' NBT 1550'	Convert SBR to SBTR lane, WBLTR to WBR, & EBTR to EBT & added EBR (simple)
Montlake Blvd. NE/25 th Ave. NE	B	12	0.93		A	7	0.84		Cycle length optimization with the other north intersections (simple)
Montlake Blvd./Walla Walla Rd./NE 44 th St.	A	5	0.86		B	13	0.97	NBT 550'	Cycle length optimization with the other north intersections (simple)
Montlake Blvd./NE 45 th St.	B	12	0.90		C	27	1.06	EBT 950' EBL 200'	Cycle length optimization with the other north intersections (simple)
25 th Ave. NE/Pend Oreille Rd./NE 44 th St.	A	10	0.72		B	12	0.57		Cycle length optimization with the other north intersections (simple)
NE Pacific St./NE Pacific Pl.	A	9	0.93	EBL 350'	B	12	0.92	EBL 375'	Modify phasing, EBT to run concurrently with EBL after ped phase (simple)
NE Pacific St./15 th Ave. NE	D	38	0.93	SBL 450' EBT 500'	C	32	0.89	SBL 350'	Convert NBTR to separate NBT & NBR, add overlap phase (simple)
Lake Washington Blvd./SR 520 EB On/WB Off Ramps	D	42	1.11	SBL 300' NBR 300'	B	16	0.88		Signalize (simple)



Table 7 (cont'd). Westside 2030 6 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
SR 520/Montlake Blvd. Interchange (with 2 nd parallel bascule bridge)									
Montlake Blvd. NE/SR 520 EB Ramps	F	138	1.70	EBL 625' WBT 275' WBR 475' SBL 1025' NBR 1725'	E	75	1.24	EBL 350' EBT 300' WBT 250' WBR 225' SBL 275' NBR 750'	
Lake Washington Blvd./SR 520 EB On/WB Off Ramps	D	36	1.11	NBR 75'	B	17	0.89		Signalize (simple)
Montlake Blvd. NE/SR 520 WB Ramps	D	42	1.19	NBL 800' NBT 550' SBT 1225' SBR 1400'	A	10	0.94	NBT 525' SBT 375'	WB off-ramp HOV right-turns merge with GP right-turns before intersection (simple) Add SBT (difficult)



Table 8. Eastside 2030 6 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
84 th Ave. NE Interchange									
84 th Avenue NE/SR 520 EB Off-Ramp	E	35	1.03		E	43	1.06		
92 nd Ave. NE Interchange									
92 nd Ave. NE/SR 520 WB Off/NE 33 rd St.	F	186	1.33	WBLTR 740'	F	58	0.91	WBLR 230'	
Bellevue Way Interchange									
Bellevue Way/NE 38 th St.	A	9	0.68		C	27	0.90	NBT 830'	NBT (difficult)
Bellevue Way/NE Points Drive	B	19	0.88		E	57	1.17	NBL 330' SBT 1010' EBR 280'	WBL (difficult)
108 th Ave. NE Interchange									
108 th Ave. NE/NE Northup Way	D	42	0.98	SBL 490'	D	39	0.95	SBL 350'	EBL, WBL (difficult)
124 th Ave. NE Interchange									
124 th Ave. NE/Northup Way	C	24	0.90		C	31	0.94		NBR, SBR (simple to difficult)
148 th Ave. NE Interchange									
148 th Ave. NE/NE 24 th St.	F	126	1.76	NBT 1180' SBL 940' WBR 1510'	F	130	1.59	SBL 380' EBL 330' WBL 530' WBR 1560'	Triple SBL and free WBR (difficult)
148 th Ave. NE/SR 520 WB Ramps/NE 29 th St.	D	39	0.98	WBL 500' WBR 470'	E	59	1.37	SBT 610' WBT 750'	



Table 8 (cont'd). Eastside 2030 6 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
NE 51 st St. Interchange									
108 th Ave. NE/NE Northup Way	D	42	0.98	SBL 490'	D	39	0.95	SBL 350'	EBL, WBL (difficult)
NE 40 th St. Interchange									
NE 40 th St./SR 520 EB Ramps	D	38	1.36		B	11	0.82		NBL, EBT, Free NBR (difficult)
NE 40 th St./156 th Ave. NE	F	110	1.49	EBT 920' EBR 1890'	E	67	1.23	NBL 570' EBR 260' WBT 870'	NBL, SBL, Free EBR (difficult)
W Lake Sammamish Pkwy Interchange									
SR 520 EB Ramps/W Lake Sammamish Pkwy.	F	150	1.60	SBT 1240' EBLR 870'	F	214	1.99	NBL 580' NBT 3070' SBT 3210' EBL 910'	SBL (difficult)
SR 520 WB Ramps/W Lake Sammamish Pkwy./Leary Wy NE	F	91	2.77	NBT 1130' EBR 800'	F	212	2.24	NBT 1780' NBR 4770' SBL 620' SBT 2410' SBR 2200' EBL 870' EBT 1490'	
159 th PL. NE/NE Leary Way	A	5	0.60		F	123	1.48	SBL 910' EBL 500' EBT 2390' WBT 1990'	
Bear Ck. Pkwy/NE Leary Way	B	16	0.84		F	148	1.69	NBL 1570' EBT 1530' EBR 2810'	Free EBR, WBT (difficult)
Bear Ck. Pkwy/NE 74 th St.	B	11	0.46		D	38	0.98	SBL 380' SBT 1050' WBR 450'	SIG (simple)



Table 8 (cont'd). Eastside 2030 6 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
Redmond Way Interchange									
Redmond Way/SR 520 WB On	B	16	0.92		D	51	1.10	SBT 510' EBL 250' WBT 1040'	WBR (simple to difficult)
Redmond Way/SR 520 EB Off	B	16	0.84		F	104	1.35	NBR 1440' EBT 850'	NBL (difficult)
NE 76 th St./SR 520 WB off	B	18	0.91	WBT 610'	B	16	0.91	WBT 660'	SIG (simple)
Redmond Way/NE 70 th St.	C	21	0.88		E	72	1.17	SBT 1460'	NBT, SBT, SBR (difficult)
E Lake Sammamish/180 th Ave/Redmond Way	D	46	1.03		D	40	1.04	SBR 670'	NBL, EBT, Free EBR, WBT (difficult)
Avondale Way Interchange									
Union Hill Rd/Avondale Rd. Extension	F	90	1.25	SBT 1150'	E	71	1.18	NBT 1150'	NBT, SBT (difficult)
Avondale Rd. Extension/ Avondale Rd.	A	4	0.75		E	58	1.16	NBR 1310' EBT 770'	NBR, WBL (difficult)



1.6 SUMMARY OF 2030 8-LANE BUILD ALTERNATIVE OPERATIONS

Tables 9 and 10 list Westside and Eastside intersections operating at LOS E or LOS F with the 2030 8-Lane Build alternative, and intersections requiring design modifications to match 2030 No Action performance, regardless of LOS. Intersections shown at LOS E or LOS F but with no design modifications perform as well or better than the 2030 No Action alternative as proposed, and no design modifications are needed. Potential design modifications are also listed, along with the same three-level qualitative assessment of difficulty used above for 6-Lane Build alternative design modifications.

To meet or exceed 2030 No Action Alternative performance measures with the 2030 8-Lane Build alternative, both the Westside and Eastside local street networks require substantial improvements at nearly every interchange and most of the intersections included in the analysis. Design plans analyzed for the traffic analysis include a number of intersection improvements compared to existing conditions; these locations are not listed below if they provide LOS D or better. The potential design modifications identified are needed in addition to changes already in the design in order to meet or exceed 2030 No Action performance measures. As with the 6-Lane Build alternative, an extremely preliminary qualitative rating of difficulty is assigned, and the feasibility of potential design modifications will be evaluated further as part of the DEIS analysis.



Table 9. Westside 2030 8 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
I-5/Stewart St. Interchange									
Denny Way/Stewart St.	D	40	1.00	WBL 375'	B	12	0.84		Permissive WBL (simple)
John St./Eastlake Ave.	C	32	0.87	SBT 250'	B	11	0.61	SBT 125'	3 rd WBT from I-5 off-ramp (difficult)
I-5/Mercer St. Interchange									
Mercer St./Fairview Ave./I-5 Ramps	E	70	1.15	EBTL 1000' WBL 675' WBR 1200' NBT 225'	F	151	1.77	EBTL 1500' WBL 200' WBR 475' NBT 225 NBR 900'	3 rd WBR (difficult)
Valley St./Fairview Ave. N	B	17	0.88		D	43	1.08	NBL 400' SWT 325'	Timing adjustments (simple)
SR 520/Harvard Ave. Interchange									
Roanoke St./10 th Ave. E	A	9	0.75		A	9	0.81		Restripe WBL lane to left/through (simple)
Roanoke St./Harvard Ave./SR 520 WB Off Ramp	D	39	1.01	EBL 150' EBT 350' SBL 175'	E	77	1.32	EBL 350' EBT 300' WBT 325' WBR 225' NBL/T 250' NBR 75' SBL 350' SBL/R 325'	Restripe inside EB lane to left-turn only (simple)



Table 9 (cont'd). Westside 2030 8 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
SR 520/Montlake Blvd. Interchange									
Montlake Blvd. NE/SR 520 EB Ramp	F	143	1.87	EBL 400' WBLTR 225' WBR 375' SBL 1025' SBT 325' NBL 230' NBT 1575'	F	98	1.69	EBL 200' WBLTR 150' WBR 150' SBL 250' SBT 400' NBT 750'	Per Design Drawings.
Montlake Blvd. NE/NE Pacific St.	E	75	1.22	NBL 500' SBT 1200' EBL 400' EBT 400' EBR 675'	D	47	1.25	NBT 850' EBL 375'	Added Lanes: EBT, SBT, SBR, NBR, EBR HOV lane. (difficult) No E/W ped crossings. WB approach restricted to stop/yield control & RT only. Note: SBT lane would merge back in before the Montlake Bridge Modifications short of adding a 3 rd SB lane could attain LOS F conditions with 100 sec/veh of delay during the AM peak, and bring the PM peak to better than 2030 No Action conditions.
Montlake Blvd. NE/NE Pacific Pl.	C	25	1.03	NBL 350' SBT 1275'	F	83	1.29	EBL/T 75' WB L/T 225' NBT 1325'	No E/W ped crossings, E/W minimum times reduced. (simple)



Table 9 (cont.) Westside 2030 8 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
Montlake Blvd. NE/25 th Ave. NE	B	12	0.78		A	7	0.80		3 rd NBR lane, 3 rd SWL lane (difficult)
Montlake Blvd./Walla Walla Rd./NE 44 th St.	A	8	0.90	EBL/T 350'	A	6	0.88		3 rd NET lane (difficult)
Montlake Blvd. NE/NE Pacific St.	E	75	1.22	NBL 500' SBT 1200' EBL 400' EBT 400' EBR 675'	D	47	1.25	NBT 850' EBL 375'	Added Lanes: EBT, SBT, SBR, NBR, EBR HOV lane. (difficult) No E/W ped crossings. WB approach restricted to stop/yield control & RT only. Modifications short of adding a 3 rd SB lane could attain LOS F conditions with 100 sec/veh of delay during the AM peak, and bring the PM peak to better than 2030 No Action conditions.
Montlake Blvd. NE/NE Pacific Pl.	C	25	1.03	NBL 350' SBT 1275'	F	83	1.29	EBL/T 75' WB L/T 225' NBT 1325'	No E/W ped crossings, E/W minimum times reduced. (simple)
Montlake Blvd. NE/25 th Ave. NE	B	12	0.78		A	7	0.80		3 rd NBR lane, 3 rd SWL lane (difficult)
Montlake Blvd./Walla Walla Rd./NE 44 th St.	A	8	0.90	EBL/T 350'	A	6	0.88		3 rd NET lane (difficult)
Montlake Blvd./NE 45 th St.	B	16	0.92		B	14	0.95	EBL 200'	3 rd EBT lane, 3 rd SBL lane (difficult)
25 th Ave. NE/Pend Oreille Rd./NE 44 th St.	C	25	0.87	NBL 275' SBL 325'	B	13	0.66	NBL 125'	SBR (simple to difficult)
NE Pacific St./NE Pacific Pl.	A	7	0.85		B	13	0.94		Relocate ped crossing (simple)
NE Pacific St./15 th Ave. NE	D	37	0.94	SBL 325'	C	30	0.89	SBL 250'	2 nd SBL, NBR with overlap phase (difficult)
Lake Washington Blvd./SR 520 EB On/WB Off Ramps	A	7	0.72		B	13	0.97		2 nd NWR lane, signalize (difficult)



Table 10. Eastside 2030 8 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
84th Ave. NE Interchange									
84 th Avenue NE/SR 520 EB Off-Ramp	E	40	1.06		E	43	1.06		
92nd Ave. NE Interchange									
92 nd Ave. NE/SR 520 WB Off/NE 33 rd St.	F	150	1.24	WBLR 620'	F	62	0.92	WBLR 240'	
Bellevue Way Interchange									
Bellevue Way/NE 38 th St.	B	15	0.85		C	27	1.02		NBTR (difficult)
Bellevue Way/NE Points Drive	B	15	0.85		C	32	1.06	SBT 810'	NBL (difficult)
Bellevue Way/SR 520 WB On/EB Off Ramps	C	24	0.86		D	36	1.09	NBR 770'	Free SBR, WBL (difficult)
108th Ave. NE Interchange									
108 th Ave. NE/NE Northup Way	C	30	0.93		E	62	1.18	EBL 640' WBR 340'	
124th Ave. NE Interchange									
124 th Ave. NE/Northup Way	C	24	0.76		D	36	0.98	WBR 240'	NBR, SBL, SBR (difficult)
148th Ave. NE Interchange									
148 th Ave. NE/NE 24 th St.	E	77	1.31	SBL 940' EBL 260' WBR 1170'	F	96	1.55	SBL 380' SBT 780' EBL 330' WBR 1430'	EBR, WBL, NBT (difficult)
148 th Ave. NE/SR 520 EB Ramps	B	20	0.95		C	25	1.04	EBR 410'	Free WBR, Free NBR (difficult)
148 th Ave. NE/SR 520 WB Ramps/NE 29 th Street	D	39	0.98	WBL 200' WBR 410' NBT 530'	E	57	1.36	WBT 750'	WBR, SBR (difficult)



Table 10 (cont'd). Eastside 2030 8 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
NE 51 st St. Interchange									
NE 51 st St./SR 520 WB Ramps	B	14	0.77		A	9	0.64		SBR (difficult)
NE 51 st St./SR 520 EB Ramps	B	18	0.92		C	22	0.97		NBL (difficult)
NE 40 th St. Interchange									
NE 40 th St./SR 520 WB Ramps	C	23	0.86		C	31	1.15	WBL 480'	SBL (difficult)
NE 40 th St./SR 520 EB Ramps	D	37	1.34		B	18	0.92	EBL 270'	EBT, Free NBR (difficult)
NE 40 th St./156 th Ave. NE	F	129	1.56	EBR 1560' SBL 340'	E	71	1.17	NBL 750' WBT 1060'	Free EBR, WBR, NBR, SBR (difficult)
W Lake Sammamish Pkwy Interchange									
SR 520 EB Ramps/W Lake Sammamish Pkwy.	F	190	1.75	EBL 1900' SBT 2040'	F	213	2.06	NBL 770' NBT 3060' SBT 3250' EBL 920'	A direct fly-over ramp to accommodate a very high volume eastbound left-turn movement. (difficult)
SR 520 WB Ramps/W Lake Sammamish Pkwy./Leary Wy NE	F	92	1.35	NBT 1570' NBR 1280' EBL 500' EBR 660'	F	221	2.41	NBT 1770' NBR 4970' SBL 620' SBT 2520' SBR 2150' SBL 1120' WBT 1310'	SBL (difficult)
159 th PL. NE/NE Leary Way	A	9	0.65		F	109	1.46	SBL 880' EBT 2470' WBT 1930'	SBL, EBL, EBT, WBT (difficult)
Bear Ck. Pkwy/NE Leary Way	B	18	0.83		F	147	1.69		WBT (difficult)
Bear Ck. Pkwy/NE 74 th St.	B	17	0.43		C	26	1.04	WBR 370'	Signalize (simple)



Table 10 (cont'd). Eastside 2030 8 Lane: Summary of LOS E and F Locations and Locations Requiring Design Modifications

Intersection	AM Peak Hour				PM Peak Hour				Modifications (Degree of Difficulty)
	LOS	Delay (sec.)	V/C	Critical Queue	LOS	Delay (sec.)	V/C	Critical Queue	
Redmond Way Interchange									
Redmond Way/SR 520 WB On	B	14	0.92		E	56	1.28	EBL 220' WBT 910'	SBL (difficult)
Redmond Way/SR 520 EB Off	B	19	0.85		F	133	1.64	NBR 1560' EBT 700'	NBL (difficult)
NE 76 th St./SR 520 WB Off	C	23	0.81		B	18	0.85		Signalize, WBL (difficult)
Redmond Way/NE 70 th St.	B	11	1.02	NBT 880'	E	80	1.50	SBT 1300' EBL 240'	NBT, SBT, SBR (difficult)
E Lake Sammamish/180 th Ave/Redmond Way	E	67	1.16		D	49	1.20	EBT 670' EBR 1160'	NBL, EBT, Free EBR, WBT (difficult)
Avondale Way Interchange									
Union Hill Rd/Avondale Rd. Extension	E	69	1.14	SBT 1020' WBL 380'	F	114	1.37	NBR 500'	NBT, Two SBT, WBL (difficult)
Avondale Rd. Extension/Avondale Rd.	A	9	0.93	WBL 450'	F	85	1.33	NBR 1740'	NBR, WBL (difficult)



1.7 SUMMARY COMPARISON OF 2030 ALTERNATIVES

Tables comparing intersection operations by analysis location for the four 2030 alternatives together (No Action, S&P, 6-Lane Build and 8-Lane Build) are included in Chapter 6, Section 5, for all the analysis locations. Rather than repeat those tables in the summary, Table 11 summarizes the number of intersections operating at LOS E or LOS F with the potential design modifications listed in the tables above.

In all scenarios, the PM peak hour has more intersections operating at LOS E or LOS F. For PM peak hour conditions, the 8-Lane Build alternative results in the fewest number of intersections operating at LOS E or LOS F of any scenario except the existing 2000 peak hour.

With existing traffic, there are 6 intersections at LOS E or LOS F in the AM peak hour and 11 in the PM peak hour. With the 2030 No Action and S&P Alternatives, the number of intersections operating at LOS E or LOS F increases to 13 in the AM peak hour and 27 in the PM peak hour.

There is no difference in the number of critical locations between the 2030 6-Lane Build alternative and the 2030 6-Lane Build alternative design option that provides a second parallel Montlake Bridge. Both show 10 intersections operating at LOS E or LOS F in the AM peak hour, and 19 in the PM peak hour.

With the 2030 8-Lane Build alternative, which carries substantially more traffic on SR 520 and as a result generates more activity at many interchanges, the number of intersections at or below LOS E is 12 in the AM peak hour and 19 in the PM peak hour.

Table 11. Number of Intersections at LOS E or F with Potential Design Modifications

Alternative	Number of Intersections			
	AM Peak Hour		PM Peak Hour	
	LOS E	LOS F	LOS E	LOS F
2000 Existing Traffic	2	4	6	5
2030 No Action and S&P Alternatives	7	6	8	19
2030 6-Lane Build Alternative	3	7	11	8
2030 6-Lane Parallel Montlake Bridge Alternative	3	7	11	8
2030 8-Lane Build Alternative	7	5	7	12

